## **AMENDMENTS TO THE CLAIMS**

- 1. (Withdrawn) A flavivirus comprising a hinge region mutation that attenuates the flavivirus.
- 2. (Withdrawn) The flavivirus of claim 1, wherein the mutation decreases the viscerotropism of the flavivirus.
- 3. (Withdrawn) The flavivirus of claim 1, wherein the flavivirus comprises a yellow fever virus vaccine strain.
- 4. (Withdrawn) The flavivirus of claim 1, wherein the flavivirus is a viscerotropic flavivirus selected from the group consisting of Dengue virus, West Nile virus, Wesselsbron virus, Kyasanur Forest Disease virus, and Omsk Hemorrhagic fever virus.
- 5. (Currently Amended) A The flavivirus of claim 1, wherein the flavivirus is a chimeric flavivirus comprising an envelope protein from an attenuated Japanese encephalitis virus, wherein said envelope protein comprises a hinge region mutation that decreases viscerotropism of the chimeric flavivirus and is present in an amino acid selected from the group consisting of amino acids corresponding to amino acids 48-61, 127-131, and 196-283 of a yellow fever virus envelope protein, and the chimeric flavivirus is in the form of a vaccine.

- 6. (Currently Amended) The <u>chimeric</u> flavivirus of claim 5, wherein the chimeric flavivirus comprises the capsid and non-structural proteins of a first flavivirus virus and the premembrane and envelope proteins of a second flavivirus comprising an envelope protein mutation that attenuates the chimeric flavivirus.
- 7. (Currently Amended) The <u>chimeric</u> flavivirus of claim 6, wherein the second flavivirus is a Japanese encephalitis virus.
- 8. (Withdrawn) The flavivirus of claim 6, wherein the second flavivirus is a Dengue virus.
- 9. (Withdrawn) The flavivirus of claim 8, wherein the Dengue virus is Dengue-1, Dengue-2, Dengue-3, or Dengue-4 virus.
- 10. (Withdrawn) The flavivirus of claim 1, wherein the mutation is in the hydrophobic pocket of the hinge region of the envelope protein.
- 11. (Withdrawn) The flavivirus of claim 10, wherein the second flavivirus is a Dengue virus and the mutation is in the lysine at Dengue envelope amino acid position 202 or 204.
- 12. (Withdrawn) The flavivirus of claim 11, wherein the mutation is a substitution of the lysine.

- 13. (Withdrawn) The flavivirus of claim 12, wherein the lysine is substituted with arginine.
- 14. (Withdrawn) A vaccine composition comprising the flavivirus of claim 1 and a pharmaceutically acceptable carrier or diluent.
- 15. (Withdrawn) A method of inducing an immune response to a flavivirus in a patient, the method comprising administering to the patient the vaccine composition of claim 14.
- 16. (Withdrawn) The method of claim 15, wherein the patient does not have, but is at risk of developing, infection by the flavivirus.
- 17. (Withdrawn) The method of claim 15, wherein the patient is infected by the flavivirus.
- 18. (Withdrawn) A method of producing a vaccine comprising a flavivirus, the method comprising introducing into the flavivirus a mutation that results in decreased viscerotropism.
- 19. (Withdrawn) The method of claim 18, wherein the mutation is in the hinge region of the envelope protein of the flavivirus.

- 20. (Withdrawn) The method of claim 19, wherein the mutation is in the hydrophobic pocket of the envelope protein of the flavivirus.
- 21. (Withdrawn) A method of identifying a flavivirus vaccine candidate, the method comprising the steps of:

introducing a mutation into the hinge region of the flavivirus; and

determining whether the flavivirus comprising the hinge region mutation has decreased viscerotropism, as compared with a flavivirus virus lacking the mutation.

- 22. (Withdrawn) The method of claim 21, wherein the mutation is in the hinge region of the envelope protein of the flavivirus.
  - 23. (Withdrawn) The method of claim 21, wherein the flavivirus is a yellow fever virus.
  - 24. (Withdrawn) The method of claim 21, wherein the flavivirus is a chimeric flavivirus.
- 25. (New) The chimeric flavivirus of claim 7, wherein the second flavivirus is an attenuated Japanese encephalitis virus, and the hinge region mutation is a reversion to a wild-type sequence at envelope amino acid position 279.
- 26. (New) The chimeric flavivirus of claim 25, wherein the hinge region mutation at envelope amino acid position 279 is a substitution of methionine with lysine.

- 27. (New) The chimeric flavivirus of claim 25, wherein the attenuated Japanese encephalitis virus is the JE-SA-14-14-2 strain.
- 28. (New) The chimeric flavivirus of claim 6, wherein the first flavivirus is a yellow fever virus.
- 29. (New) The chimeric flavivirus of claim 28, wherein the yellow fever virus is YF-17D.